

**NASA/GSFC BPA SOLICITATION - FABRICATION OF COMMERCIAL SERVICES AND SUPPLIES
VENDOR QUESTIONNAIRE**

Vendor Name: _____ Date: _____

Point of Contact: _____ Phone: _____

Email Address: _____

Vendor Type of Operations: Identify areas of expertise. Check operations that apply and submit appropriate documentation, literature, brochures and references that support type of operation selected.

Vendor Rotation Categories

Operation	Process	Size or Specifics Category 1	Size or Specifics Category 2	Size or Specifics Category 3	Check Operations that Apply
Machining	Milling	0 to 20" in X, Y, Z	20 to 40 inches	Greater than 40	
	Turning	30" long by 12 Ø	>30" and >12 Ø	N/A	
	Ram or wire EDM	Minimum envelope 14"X, 10"Y, 8"Z	N/A	N/A	
	Complex Machining	0 to 20" in X, Y, Z	20 to 40 inches	Greater than 40	
	Beryllium	All size Requirements	N/A	N/A	
Sheet Metal	Sheet Metal	48" Standard Shear or Break	Processes in excess of 48"	N/A	
Welding	Certified Welding	0 to 40" envelope	>40" envelope or weldments	N/A	
	Electron Beam	All size requirements	N/A	N/A	
Coatings	Titanium Finishing	All Size requirements	N/A	N/A	
	Electroplating	0 to 30" envelope	>30" envelope	Special processes Nickel, Gold Etc.	
	Painting\Silk Screen	General Painting	BR127 Primer	Silk Screening	
Distribution	Metallic Materials	Aluminum	Copper/Brass	High Strength	
	Plastic Materials	G10, Delrin etc	N/A	N/A	
	Fastener Hardware	Standard Fasteners	Helical Wire inserts	N/A	
Special Process	Water Jet Cutting	All Requirements	N/A	N/A	
	Rapid Prototyping	All Requirements	N/A	N/A	
	Composites	0 to 30" Envelope	>30" envelope	N/A	
	NDE and Analysis	Dimensional Inspection	Mechanical testing	Evaluation of Electroplating baths or solutions	
	Heat-Treat	24" x 24" x 48" envelope	Greater than 24" x 24" x 48"	Vacuum or inert gas atmosphere	
	Thin Metal Milling	All Requirements	N/A	N/A	
	Diamond Turning	All Requirements	N/A	N/A	

Vendor DUNS Number: _____ (Required) CAGE Code: _____

Street Address: _____
(Physical address)

City: _____ State & (nine digits) Zip Code: _____

Remittance Address (if different): _____

City: _____ State & Zip: _____

Telephone #: _____ Fax #: _____

Check all Categories that Apply:

- ☐ 1. Small Business
- ☐ 2. Small Disadvantaged Business (8a must be SBA Certified)*
- ☐ 3. Women Owned Small Business
- ☐ 4. HUB Zone Small Business (Must be SBA Certified)*
- ☐ 5. Veteran Owned Small Business
- ☐ 6. Service-Disabled Veteran Owned Small Business
- ☐ 7. Historically Black College/University or Minority Institution
- ☐ 8. Non-Profit

*Primary NAICS Code (for SBA Certified business): _____

NOTE:

This certification is valid unless you notify us of any changes. It is your responsibility to notify us if your size or ownership status changes.

For companies providing "spaceflight" fabrication product or service to the government, check the quality standard certified or compliant that applies:

- ☐ AS9100
- ☐ ISO 9001

The items proposed as "non-flight" will not require Offerors to be AS9100 or ISO 9001 compliant.

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ROTATION CATEGORY DEFINITIONS

➤ **Machining**

- Fabrication of finished piece parts in ferrous, non-ferrous, and plastic materials from engineering drawings or electronic part files with Critical Dimension Drawing. Parts may range in complexity from very simple to complex, with quantities ranging from 1 to approximately 100.

➤ **Milling**

- Fabrication services using conventional milling machines, standard cutting tools, and industry standard lubricants. Milling machines may be either manually or computer controlled.
 - Category One is defined as encompassing an envelope of between 0" to 20" in the X, Y, and Z axis.
 - Category Two is defined as encompassing an envelope of between 20" to 40" in the X, Y, and Z axis.
 - Category three is defined as encompassing an envelope larger than 40" in the X, Y, and Z axis.

➤ **Turning**

Fabrication services using conventional metal cutting lathes, standard cutting tools, and industry standard lubricants. Lathes may be either manually or computer controlled.

- Category One is defined as encompassing a work piece length up to 30" and a diameter of up to 12".
- Category Two is defined encompassing a work piece length larger than 30" and a diameter larger than 12".

➤ **Ram and/or Wire Electrical Discharge Machining (EDM)**

- Fabrication services using electrical discharge machining, either of the die sinking electrode method or traveling wire method. It is highly desirable that machines employ re-cast minimizing technologies.
 - Category One will include all foreseeable size requirements but minimum machining envelope capabilities should be 14" in X axis, 10" in Y axis and 8" in Z axis with U and V axis/ taper angle height of $\pm 4^\circ$, 30 degrees.
 - Complex Machining
- Fabrication of intricate, complex, and tightly toleranced parts employing multi-axis machining from engineering drawings or electronic part files. Requirements may include rare, exotic or difficult materials. Completion of intricate parts may including access to multiple secondary operations including but not limited to heat treating, electroplating, thread forming, special coatings, and non-destructive examination, such as dye penetrant inspection or ultrasonic inspection. Vendors are responsible for all certification of secondary operations and must provide said paperwork with final documentation package.
 - Category One is defined as encompassing an envelope of between 0" to 20" in the X, Y, and Z axis.
 - Category Two is defined as encompassing an envelope of between 20" to 40" in the X, Y, and Z axis.

- Category three is defined as encompassing an envelope larger than 40" in the X, Y, and Z axis.

➤ **Beryllium Machining**

- Beryllium or beryllium-alloy machined mechanical components from engineering drawings or electronic part files. Material forms may include, but are not limited to sheet, plate, bar, and rod.
- Category one will include all foreseeable size requirements.

➤ **Sheet Metal**

- Fabrication services using a variety of technologies to fabricate parts from sheet material. These technologies may include shearing, punching, bending, rolling, and surface finishing in various materials up to and including ¼ inch thickness. Some drilling and riveting of parts may be included.
- Category one will include processes up to 48 inches, or the size of a standard shear or break.
- Category Two will include all processes in excess of 48 inches

➤ **Welding**

- The vendor may be required to provide all required materials, fabricate components, and provide fitting/assembly capabilities and post welding machining of critical dimensions as required. The vendor may be requested to provide the welding process directly to parts manufactured by GSFC or one of their Subcontractors as required. The Vendor may be requested to provide NDE or other Testing/Inspection processes as required. Larger size categories may require heavy lifting equipment and or overhead crane capability.

➤ **Coating**

- Electroplating and coatings. Vendors are expected to electroplate or otherwise coat government provided parts to mil specifications and other industry standards.

➤ **Raw Materials**

- Metallic and non metallic material which may include, but are not limited to those defined in each category. Possible shapes or forms of material will include, but are not limited to, forgings, sheet, plate, bar, rod, tube, wire, foils, or extrusions. Vendors must also possess equipment and expertise in material cutting.
- Category One is defined as supplying ferrous and non ferrous metallic materials such as carbon steels, corrosion resistant steels, aluminum, titanium and nickel alloys.
- Category Two is defined as supplying non metallic materials including, but not limited to, G10 and other fiber reinforced plastics, FR4, Vespel, Viton, Delrin, and Ultem.

➤ **Fastener Hardware**

- Aerospace Quality Fasteners for the development of both space flight and non spaceflight hardware. Fastener types to be supplied will include but are not limited to MS, NAS NA and other Military and Aerospace Specifications.
- Category One will be defined as general fastener components such as nuts, bolts, screws, bonded fastener products, threaded inserts, keyed threaded inserts, rivets, tangles inserts.

- Category Two will be defined as helical wire inserts, commonly known as Helicoils. Insert materials may range from CRES, Inconel, Nitronic 60, Titanium and primarily Phosphor Bronze.

➤ **Certified Welding**

- Fabrication services using Tungsten Inert Gas (TIG) and Metal Inert Gas (MIG) welding, Soldering and Brazing of various Metals including Aluminum, Corrosion Resistant, Mild Steel and Alloy Steels.
 - Category One is defined as encompassing an envelope of between 0” to 40”.
 - Category Two is defined as encompassing an envelope larger than 40” and may include welded assemblies.

➤ **Electron Beam**

- Fabrication services using Electron Beam welding technologies.
 - Category one will include all foreseeable size requirements.

➤ **Titanium Finishing**

- Coating services using a variety of technologies to apply coatings to parts fabricated from various alloys of Titanium.
 - Category one will include all foreseeable size requirements.

➤ **Electroplating**

- Coating services using a variety of electroplating technologies to apply coatings to parts fabricated from various materials. Electroplating processes may include Iridite, Anodize with various colors, electropolishing, nickel or gold plate. Multiple coating processes with intermediate masking may be required.
 - Category One is defined as encompassing an envelope of between 0” to 30”.
 - Category Two is defined as encompassing an envelope larger than 30”.
 - Category Three is defined as specialty processes including, but not limited to Gold, Black Nickel, Black Chrome, and various processes on Magnesium and Molybdenum.

➤ **Painting and/or Silk Screening**

- Various coating and painting to assemblies and or fabricated parts. Vendors are expected to perform painting and coating per mil specifications and other industry standards. Vendors performing Silk screening will apply labeling, numbering or other graphic designs to fabricated parts supplied by the Government.
 - Category One will include general painting requirements.
 - Category Two is application of BR127 primer including all appropriate surface preparation and processing.
 - Category Three is Silk Screening

➤ **Distribution**

- Stocking, cataloging or quickly locating various types, forms and quantities of the specific items listed below. Vendors to provide on request all material certifications, including chemical and physical characteristics as appropriate to the material supplied. The certification package will include traceability back to the manufacturer including lot number, heat number and expiration date if applicable. The material must be clearly marked from the original manufacturer.

➤ **Special Processes**

➤ **Water Jet Cutting**

- Fabrication services using machines specifically designed to cut a variety of sheet or plate materials using very high pressure streams of water augmented with abrasive additives. Vendor should be able to routinely hold tolerances of ± 0.010 "
 - Category one will include all foreseeable size requirements

➤ **Rapid Prototype**

- Fabrication services using additive manufacturing technology for rapid prototyping using virtual designs from computer aided design (CAD) or animation modeling software. The vendor must be able to convert solid models (STEP, ProE, etc.) of parts to the useable format (ex. STL) for their equipment. The vendor must be able to quote using the model only. Vendors must have expertise in Rapid Prototype using thermoplastic and resin materials.
 - Category one will include all foreseeable size requirements.

➤ **Composites**

- Fabrication services using various technologies to perform layup, consolidation and machining of Composite Panels, Composite Face sheets, and various Composite components from engineering drawings and/or other specifications. The Vendor should be able to provide tooling, autoclave, vacuum bagging, and assembly as required. The use of PrePreg Resin systems, Aluminum Honeycomb, Film Adhesives, and Epoxy Adhesives will be required. Vendors must be able to provide on request all material certifications, including chemical and physical characteristics. The certification package will include traceability back to the manufacturer including lot number and expiration date if any.
 - Category One is defined as encompassing an envelope of between 0" to 30"
 - Category Two is defined as encompassing an envelope larger than 30".

➤ **Non Destructive Examination (NDE) and Analysis**

- NDE services to include, but are not limited to, Liquid Penetrate Testing, Magnetic Particle Testing, Ultrasonic, Digital (filmless) X-Ray, Eddie Current, A & C Scan, etc. Vendor's primary business and area of expertise must be in supplying NDE services.
- Vendors must possess the equipment and expertise for the NDE being requested. These services must be performed by the vendor at their facility or by their mobile service. This category is not for pass through contracts to an NDE subcontract.
 - Category one will include all foreseeable size requirements of mechanical testing.

- Category two will include chemical analysis and testing of electroplating baths and solutions.

➤ **Heat Treating**

- Various technologies to alter the physical characteristics of materials using heat, cold, or combinations thereof. Alterations may include annealing, stress relieving, hardening, and/or tempering. Heat treating ovens must have the capability to be programmed for controlled ramping of temperatures and rates. Ovens must be able to produce oven charts capturing time and temperatures over heat treatment period. Temperature accuracy shall be +/- 10 deg. F.
- Category One is defined as encompassing an envelope of 24"x 24" x 48".
- Category Two is defined as encompassing an envelope larger than 24"x 24" x 48".
- Category Three is defined as requiring the use of an inert gas atmosphere or vacuum as to reduce oxidation to hardware.

➤ **Thin Metal Milling**

- Various technologies to fabricate parts from materials no thicker than .010 inches. Processes may include machining, photochemical etching and/or laser etching of various patterns or profiles
- Category one will include all foreseeable size requirements.

➤ **Diamond Turning**

- mechanical machining of precision elements using lathes or derivative machine tools (e.g., turn-mills, rotary transfers) equipped with natural or synthetic diamond-tipped tool bits
- Category one will include all foreseeable size requirements.